

Lecture #	Date	Day	Assignment	Papers to Read and Write a Report On	Quiz	Category	Topics	Reference Videos	
1	5-Jan	Monday	Setting up colab and AWS and testing the system works	Towards felicitous decision making: An overview on challenges and trends of Big Data + Big Data Systems: A Software Engineering Perspective		Introduction	Overview of the class+ Understanding Big Data	https://youtu.be/0uc9z8-FmVk	
2	7-Jan	Wednesday					Applications Of Big Data: Wildfire + Transit Analysis + Emergency Response		
3	12-Jan	Monday	Assignment 1: SQL	Anatomy of a Database System		Storage	Overview of databases and their anatomy+ACID Properties	https://www.youtube.com/watch?v=pomxJOFVcQs	
4	14-Jan	Wednesday					Relational Databases : SQL and Joins and access	https://youtu.be/HXV3zeQKqGY	
5	21-Jan	Wednesday		Access Path Selection and Joins+ Optimistic Concurrency			Relational Databases: Indexes, Locks and Concurrency -00	https://youtu.be/ihXf8p_-UwU	
6	26-Jan	Monday	Distribution/Partitioning: Fault Tolerance+ CAP Theorem				https://www.youtube.com/watch?v=R_Fxz14tr2M		
7	28-Jan	Wednesday	Column vs Row Oriented Databases				https://www.youtube.com/watch?v=Vw1fCeD06YI		
8	2-Feb	Monday	Assignment 2: MongoDB	columnstoresfntdbs (chapters 1, 2 and 3)			Introducing NoSQL Databases: Need and Differences/ MongoDB	https://www.youtube.com/watch?v=QwevGzVu_zk	
9	4-Feb	Wednesday		NOSQL Paper			BigTable and DynamoDB	BigTable: https://www.youtube.com/watch?v=KaRbKdMINuc DynamoDB: https://www.youtube.com/watch?v=OfZgHXsYqNE	
10	9-Feb	Monday					InfluxDB	https://www.youtube.com/watch?v=OoCsY8odmpM	
11	11-Feb	Wednesday	Graph Databases				https://www.youtube.com/watch?v=GekQqFZm7mA		
12	16-Feb	Monday	Assignment 3: Influx and Pandas	Graph DataBase Paper	Quiz 1		Batch Processing	Overview of Pandas and Parquet	Pandas: https://www.youtube.com/watch?v=vmEHCJofslg Parquet: https://www.youtube.com/watch?v=pFS-FScophU
13	18-Feb	Wednesday		Fault Tolerance Paper				Project Overview and Discussions	
14	23-Feb	Monday				Map Reduce		https://www.youtube.com/watch?v=b-lvmXoO0bU	
15	25-Feb	Wednesday	Assignment 4: Hadoop and MapReduce	Orchestrating Big Data		Quiz 2	Batch Processing	Map Reduce	
16	2-Mar	Monday		map-reduce-bookchapter.pdf + MapReduce: Simplified Data Processing on Large Clusters	Spark			https://www.youtube.com/watch?v=IQfG0faDrzE	
17	4-Mar	Wednesday			Dask			https://www.youtube.com/watch?v=EybGGLbLiPl	
Spring Break									
18	16-Mar	Monday	Assignment 4: Hadoop and MapReduce	map-reduce-bookchapter.pdf + MapReduce: Simplified Data Processing on Large Clusters	Quiz 3	Streaming	Overview (Dataflow Model) + Kafka and Pulsar and ZooKeeper		
19	18-Mar	Wednesday	Assignment 5: Spark	ComparisonOfApproachesToLargeScaleDataAnalysis.pdf			Kafka and Pulsar and ZooKeeper	Kafka: https://www.youtube.com/watch?v=JalUUBKdcAQ	
20	23-Mar	Monday					SparkStreaming	https://www.youtube.com/watch?v=UuRhEmqqhRM	
21	25-Mar	Wednesday					spark.pdf	Storm	https://www.youtube.com/watch?v=0mIEUibitzk
22	30-Mar	Monday						Apache Flink	https://www.youtube.com/watch?v=G77m6Ou_kfA
23	1-Apr	Wednesday	Assignment 6: Kafka and Containers	Kafka: a Distributed Messaging System for Log Processing		Analytics and Real-world Use Cases	Clustering	https://www.youtube.com/watch?v=eg8DIYwdMvg	
24	6-Apr	Monday		Pagerank			https://www.youtube.com/watch?v=meonLcN7LD4		
25	8-Apr	Wednesday		Borg, Omega, and Kubernetes				Anomaly Detection	https://www.youtube.com/watch?v=12Xq9OldQwQ
26	13-Apr	Monday						GeoInformational Systems Processing (Traffic and Incident Data)	None
27	15-Apr	Wednesday	Assignment 7 Visualization	Efficient Data Management for Intelligent Urban Mobility Systems		Project Presentations	Project Presentations 1		
28	20-Apr	Monday					Project Presetation 2		